In the Claims:

No amendments have been made to the claims. The following listing of claims is provided for the convenience of the Examiner.

1   1.   A spatial light modulator, comprising:

2   memory elements configured to store data therein and shift data therebetween;

3 and

4   light modulation elements alterable in response to the data stored in respective

5 ones of the memory elements.

1   2.   The spatial light modulator according to claim 1, wherein said memory

2 elements are arranged in an array having rows and columns.

1   3.   The spatial light modulator according to claim 2, wherein said memory

2 elements are configured to shift the data bi-directionally between rows.

1   4.   The spatial light modulator according to claim 2, wherein said memory

2 elements are configured to shift the data bi-directionally between columns.

1   5.   The spatial light modulator according to claim 2, wherein said memory

2 elements are configured to shift the data bi-directionally between at least one of non-adjacent

3 rows and non-adjacent columns.

1   6.   The spatial light modulator according to claim 1, wherein said memory

2   elements are arranged in a nonorthogonal pattern.

1   7.   The spatial light modulator according to claim 1, wherein said memory

2   elements are static memory elements.

1   8.   The spatial light modulator according to claim 7, wherein each of the memory

2   elements includes a feedback element.

1   9.   The spatial light modulator according to claim 8, wherein the feedback

2   element is a weak feedback element.

1   10.   The spatial light modulator according to claim 1, further comprising access

2   control elements connected to said respective memory elements.

1   11.   The spatial light modulator according to claim 10, wherein said access control

2   elements include a forward access control element operable to control the state of said

3   respective memory element during a forward shift operation and a reverse access control

4   element operable to control the state of said respective memory element during a reverse shift

5   operation.

1   12.   The spatial light modulator according to claim 1, wherein each of said

2   memory elements further includes an output node electrically coupled to an electrode of said

3   respective light modulation element and to an input node of an additional one of said memory

4   elements.

1   13.   The spatial light modulator according to claim 12, wherein said memory

2   elements are interconnected in a shift register configuration.

1   14.   The spatial light modulator according to claim 13, wherein said memory

2   elements each include a master-slave flip-flop.

1   15.   The spatial light modulator according to claim 13, further comprising:

2   a timing circuit in communication with each of said memory elements to shift

3   the data between said memory elements.

1   16.   The spatial light modulator according to claim 15, wherein said timing circuit

2   comprises a ripple clock.

1   17.   The spatial light modulator according to claim 15, wherein said light

2 modulation elements comprise liquid crystal material.

1   18.   The spatial light modulator according to claim 17, wherein said light

2 modulation elements further comprise:

3   a common electrode configured to receive a common electrode signal for said

4 light modulation elements; and

5   a respective pixel electrode configured to receive the data stored in said

6 respective memory elements.

1   19.   The spatial light modulator according to claim 18, wherein said timing circuit

2 is operable to shift inverted data from a first one to a second one of the memory elements and

3 to switch the common electrode signal to alter the light modulation element associated with

4 the second one of the memory elements as a function of the inverted data.

1   20.   The spatial light modulator according to claim 1, wherein said light

2 modulation elements comprise micromirrors.

1   21.   The spatial light modulator according to claim 1, wherein said memory

2 elements are arranged in blocks, a first one of said blocks configured to receive data from an

3 external input and the others of said blocks configured to receive data from other ones of said

4 memory elements.

1   22.   A method for performing photolithography, said method comprising:

2   loading data representing an image into memory elements in communication

3   with respective light modulation elements;

4   altering ones of the light modulation elements in response to the data loaded

5   thereunto to transfer the image onto a substrate;

6   shifting the data between the memory elements;

7   altering ones of the light modulation elements in response to the data shifted

8   thereunto to transfer the image onto the substrate.

1   23.   The method according to claim 22, wherein each said altering further

2   comprises:

3   applying a voltage in response to the data to the change optical characteristics

4   of the light modulation elements.

1   24.   The method according to claim 22, wherein said shifting further comprises:

2   utilizing a ripple clock to control the timing of said shifting.

1   25.   The method according to claim 22, further comprising:

2   moving at least one of the substrate and the light modulation elements relative

3   to the other.

1   26.   The method according to claim 25, wherein said altering in response to the

2   shifted data is performed after said moving.